

Responding to the Aftermath
of the Mount Saint Helens
Eruption: Analysis and
Communication of
Uncertainty Through
Scenario Planning
Part 2

Leonard Shabman

What Was Accomplished

- Scenarios help DM recognize uncertainty
- Scenarios help DM choose
 - Attitudes toward uncertainty
 - Cost and “regret “concerns
 - Financial
 - Opportunity Cost (Environmental)
- Choice was the SRS over the SSB Adaptive Approach

Questions in Retrospect

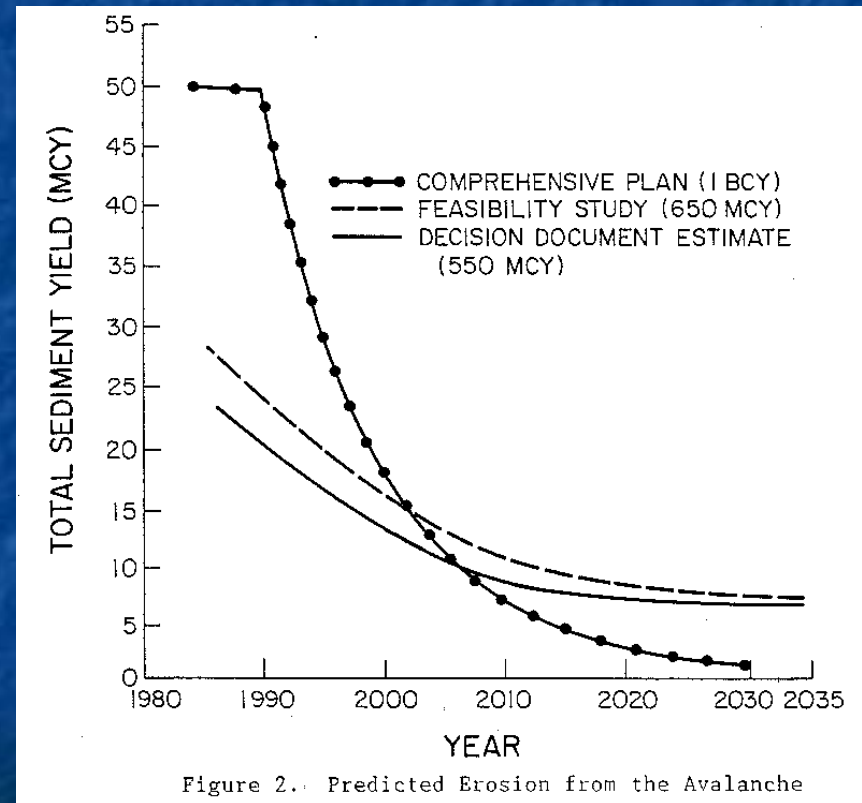
--Recognizing that the
SRS was chosen

■What was known in 1985
that would have made the
scenarios supporting an
adaptive (SSB) approach
credible ?

What conditions and
circumstances would
have made the
scenarios supporting an
adaptive (SSB) approach
acceptable?

Scenarios Supporting the SRS Required High Sediment Budget

- What did the 1985 Decision Document Report?
 - Declining sediment budget estimate
 - Comprehensive plan
 - Feasibility study
 - Decision Document
 - Decay curve suggested declining urgency as each year passed



Scenarios Supporting the SRS Required High Sediment Budget

- What did the 1985 Decision Document Report?
 - Sediment monitoring data from the outset below projected loading
 - “Expert panel” (no ITR) adjustment factor added 25% to best estimate

Scenarios Supporting the SRS Required Unstable Channels

- What did the 1985
Decision Document
Report?
 - Channels showed
significant armoring

■ picture

The Scenarios Supporting the SRS Required Limited Recovery of the Watershed

- What did the 1985 Decision Document Report?
- The watershed was rapidly re-vegetating
- Picture -

Scenarios Supporting the SRS Required Constant and Significant Volcanic Activity

- What did the 1985 Decision Document Report?
- The mountain displayed a tendency to quiescence



Reflections on the Scenarios

- Scenario development was not original intent
- Need to quickly hone in on decision-relevant uncertainties
 - Example – eruption frequency
- Needed a willingness to
 - Admit and report uncertainty
 - Carry multiple alternatives to high level of design detail and analysis

Reflections on the SRS Choice

- Organizational culture clung to an original vision and resisted continuing analysis
- Only ASACW was engaged in building and understanding scenarios
 - lingering images of the disaster was dominant frame of reference
- Environmental logic of letting system naturalize / self design had few advocates
 - Environmental cost was not a strong consideration
- Uncertainty of future funding commitments to an adaptive SSB program were key

ASACW Perspectives

- Do not rush to decision (demands continuing analysis)
 - Increase certainty before making high cost irreversible decision
 - Sumps were in place throughout
- Passage of time made the SSB scenario more credible and acceptable
- Why not say so?
 - Understanding the Transmittal Letters

Footnote to the Story

- SRS was full by 2004
 - 102 MCY trapped
- Final decision document estimate of E was 550 MCY
 - About 200 MCY to be eroded between 1998 and 2004.
- If less than .64 E eroded then SSB was cost-preferred (risk equivalent) alternative
 - $102/200 = .50$ E (trap vs. yield)

